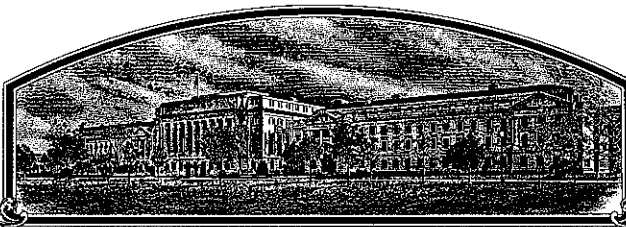


No.

9100195



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

N. C. Agricultural Research Service

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS SEED OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

**Waived, except that this waiver shall not apply to breeder seed, foundation seed, labeling requirements, and blending limitations*.*

SOYBEAN

'Brim'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 28th day of February in the year of our Lord one thousand nine hundred and ninety-five.

Attest:

Kenneth Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard R. Rigney
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) a. U.S. Dept. of Agriculture/Agri. Research Service b. N.C. Agricultural Research Service		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. Experimental	3. VARIETY NAME "Brim"
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) Box 7643 N.C. State University Raleigh, NC 27695-7643		5. PHONE (include area code) (919) 737-2718	FOR OFFICIAL USE ONLY PVPO NUMBER <div style="font-size: 2em;">9100195</div>
6. GENUS AND SPECIES NAME Glycine max	7. FAMILY NAME (Botanical) Leguminosae	FILING Date <u>June 12, 1991</u> Time <input type="checkbox"/> A.M. <input type="checkbox"/> P.M. FEES Filing and Examination Fee: <div style="font-size: 1.5em;">\$ 2150.00</div> Date <u>June 12, 1991</u> RECEIVED Certificate Fee: <div style="font-size: 1.5em;">\$ 250.00</div> Date <u>Oct. 28, 1994</u>	
8. CROP KIND NAME (Common Name) Soybean		9. DATE OF DETERMINATION <u>February 19, 1990</u> <u>Oct. 28, 1994</u>	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Federal and State Governmental Agencies			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF INCORPORATION	

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
Michael W. Baker
N.C. Foundation Seed Producers, Inc.
P.O. Box 33245, Method Station
Raleigh, NC 27636

PHONE (include area code):

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

a. ☒ Exhibit A, Origin and Breeding History of the Variety.
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety.
d. ☐ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____
g. ☒ Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.)
☒ YES (If "YES," answer items 16 and 17 below) ☐ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☒ FOUNDATION ☒ REGISTERED ☒ CERTIFIED

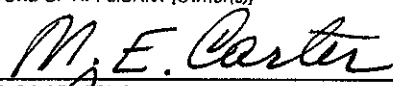
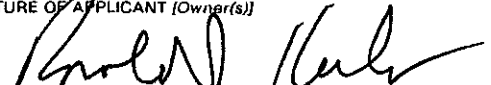
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____)
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?
☒ YES (If "YES," give names of countries and dates) USA, June 18, 1990 Oct. 28, 1994
☐ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s)) 	CAPACITY OR TITLE Administrator USDA/ARS	DATE MAY 14 1991
SIGNATURE OF APPLICANT (Owner(s)) 	CAPACITY OR TITLE Director N.C. Agri. Research Service	DATE 4/30/91

- 14a. 1. 'Brim' (N82-1198) was developed by USDA-ARS cooperating with NCARS. The line is an F_5 selection from the cross of 'Davis' x 'Essex'.
2. The initial and subsequent selection was conducted in North Carolina. The final selection was made in 1982. Yield evaluations were made the following year in local preliminary trials in North Carolina. The line was entered in regional preliminary trials (8 locations) in 1984 and in regional uniform tests in 1985-1987. Breeders seed was provided to the N.C. Foundation Seed Program in 1989 and has been increased for one year.
3. Purple flowered or tawny subsequent plants were occasionally found at very low frequency due to seed mixture. These were rogued prior to harvest.
4. Seven years of testing and increase have demonstrated no instability.
- 14b. 'Brim' (N82-1198) is most similar to 'Young'. It differs from Young by having brown pod color and higher yielding ability. In North Carolina official variety trials (1986-1989), Brim yielded 6% more than Young (see attached table).
- 14c. See attached form.
- 14d. None

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

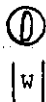
EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) N.C. Agricultural Research Service Dr. J. W. Burton (Breeder)	TEMPORARY DESIGNATION	VARIETY NAME "Brim"
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) Box 7643 N.C. State University Raleigh NC 27695-7643		FOR OFFICIAL USE ONLY PVPO NUMBER 9100195

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)

3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)

4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

☒

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) _____

★ 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow

2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low

2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1^a)2 = Type B (SP1^b)

★ 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ 10. LEAFLET SHAPE:

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) _____

11. LEAFLET SIZE:

☒ 21 = Small ('Amsoy 71'; 'A5312')
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

☒ 31 = Light Green ('Weber'; 'York')
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

★ 13. FLOWER COLOR:

☒ 1

1 = White

2 = Purple

3 = White with purple throat

★ 14. POD COLOR:

☒ 2

1 = Tan

2 = Brown

3 = Black

★ 15. PLANT PUBESCENCE COLOR:

☒ 1

1 = Gray

2 = Brown (Tawny)

★ 16. PLANT TYPES:

☒ 21 = Slender ('Essex'; 'Amsoy 71')
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

★ 17. PLANT HABIT:

☒ 1

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ 18. MATURITY GROUP:

☒ 091 = 000
9 = VI2 = 00
10 = VII3 = 0
11 = VIII4 = I
12 = IX5 = II
13 = X

6 = III

7 = IV

8 = V

★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★

☒ 0Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

★

☒ 0Bacterial Blight (*Pseudomonas glycinea*)

★

☒ 0Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

★

☒ 0Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojae*)

★

☒ 0

Race 1

☒ 0

Race 2

☒ 0

Race 3

☒ 0

Race 4

☒ 0

Race 5

☒ 0

Other (Specify)

☒ 0Target Spot (*Corynespora cassicola*)☒ 0Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☒ 0Powdery Mildew (*Microspheera diffusa*)

★

☒ 0Brown Stem Rot (*Cephalosporium gregatum*)☒ 1Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

- ★ ☐ Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)
- ☐ Purple Seed Stain (*Cercospora kikuchii*)
- ☐ Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☐ Race 1 ☐ Race 2 ☐ Race 3 ☐ Race 4 ☐ Race 5 ☐ Race 6 ☐ Race 7
- ☐ Race 8 ☐ Race 9 ☒ Other (Specify) Cylindrocladium root rot

VIRAL DISEASES:

- ☐ Bud Blight (Tobacco Ringspot Virus)
- ☐ Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ Pod Mottle (Bean Pod Mottle Virus)
- ★ ☒ Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☒ Race 1 ☒ Race 2 ☒ Race 3 ☒ Race 4 ☐ Other (Specify) _____
- ☒ Lance Nematode (*Hoplolaimus Colombus*)
- ★ ☒ Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☒ Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☒ Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☒ Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ OTHER DISEASE NOT ON FORM (Specify): _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☐ Iron Chlorosis on Calcareous Soil
- ☐ Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ Potato Leaf Hopper (*Empoasca fabae*)
- ☐ Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Young	Seed Coat Luster	Gasoy 17
Leaf Shape	Young	Seed Size	Young
Leaf Color	Tracy	Seed Shape	Young
Leaf Size	Young	Seedling Pigmentation	Young

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
Submitted	134	3	111	7	12	43.2	19.8	14	
Young Name of Similar Variety	Young 138	Young 3	Young 111	9	13	43.2	19.8	14 Young	

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

Table A. A comparison of average dates of maturity of soybean cultivars 'Brim' and 'Young' over four years in North Carolina.

	1988		1989		1991		1992		Average	
	n [†]	Date [‡]	n	Date	n	Date	n	Date	n	Date
Brim	4	10/29	4	10/23	2	10/23	3	10/22	13	10/25
Young	4	10/30	4	10/26	2	10/25	3	10/25	13	10/27

[†]n= number of locations in North Carolina

[‡]rounded to the nearest whole day

Table B. A comparison of average plant heights of soybean cultivars 'Brim' and 'Young' over four years in North Carolina.

	1988		1989		1991		1992		Average	
	n [†]	Height [‡]	n	Height	n	Height	n	Height	n	Height
Brim	1	39	4	37	2	44	3	36	10	41
Young	1	42	4	39	2	44	3	39	10	38

[†]n= number of locations in North Carolina

[‡]rounded to the nearest inch

Table

Yield (bu/a) performance of N82-1198 in the North Carolina Official Variety Test 1986-89

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>Average</u>
<u>Lenoir County</u>					
Leflore	29	29	51	29	34.5
Asgrow 6785	42	39	54	32	41.8
Young	38	33	59	39	42.3
N82-1198	40	33	69	37	44.8
L.S.D.	9	5	9	7	
<u>Washington County</u>					
Leflore	45	48		54	49.0
Asgrow 6785	57	56		54	55.7
Young	55	51		51	52.3
N82-1198	57	54		56	55.7
L.S.D.	7	7		8	
<u>Edgecomb County</u>					
Leflore		33	46	27	35.3
Asgrow 6785		33	52	32	39.0
Young		32	60	24	38.7
N82-1198		31	52	36	39.7
L.S.D.		N.S.	10	6	
<u>Robeson County</u>					
Leflore		40	37	50	42.3
Asgrow 6785		39	44	57	46.7
Young		37	44	64	48.3
N82-1198		39	39	70	49.3
L.S.D.		7	6	7	

Table - (continued) PERFORMANCE OF N82-1198

<u>Wilson County</u>				
Leflore	48	54	35	45.7
Asgrow 6785	47	61	43	50.3
Young	43	58	38	46.3
N82-1198	51	60	40	50.3
L.S.D.	5	7	3	

<u>Stanley County</u>				
Leflore		46	39	42.5
Asgrow 6785		58	38	48.0
Young		55	44	49.5
N82-1198		57	54	55.5
L.S.D.		7	8	

SUMMARY

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>Overall</u>
Leflore	37.0	39.6	46.8	39.0	41.1
Asgrow 6785	49.5	42.8	53.8	42.7	46.6
Young	46.5	39.2	55.2	43.3	45.8
N82-1198	48.5	41.6	55.4	48.8	48.6
	n=2	n=5	n=5	n=6	n=18

SOYBEAN**BRIM****Exhibit E. Statement of the Basis of Applicant's Ownership**

Brim was developed by Dr. Joe W. Burton, Research Geneticist with the U.S. Department of Agriculture, Agricultural Research Service (USDA-ARS) and Professor of Crop Science with the N.C. Agricultural Research Service (NCARS) College of Agriculture and Life Sciences, N. C. State University. Brim is owned exclusively by the USDA-ARS and the NCARS who retain all rights to its use.



United States
Department of
Agriculture

Agricultural
Marketing
Service

Science
Division

Plant Variety Protection Office
NAL Building, Room 500
10301 Baltimore Blvd.
Beltsville, MD 20705-2351

PLANT VARIETY PROTECTION OFFICE

Gentlemen:

Subject: Application No. 9100195
Variety and Kind: 'Brim' Soybean

As provided in section 83(a) of the Plant Variety Protection Act, 7 U.S.C. 2321, we request that the Certificate on the above variety be issued with a notation on the Certificate that the right to exclude others from selling, offering for sale, reproducing, importing or exporting the variety covered by this Certificate, or using it in producing a hybrid or different variety is waived, except that this waiver shall not apply to breeders seed, foundation seed, labeling requirements, and blending limitations.

It has been agreed that the Certificate should be issued in the name(s) of:

N.C. Agricultural Research Service

10/11/94

(Date)

Michael W. Baker
(Signature)



The Agricultural Marketing Service
is an agency of the
United States Department of Agriculture